DEVELOPMENT OF NEW RULES CONCERNING INCORPORATION BY REFERENCE OF NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SECONDARY ALUMINUM; PHARMACEUTICALS PRODUCTION; AMINO AND PHENOLIC RESINS; POLYETHER POLYOLS PRODUCTION; SOLVENT EXTRACTION OF VEGETABLE OIL; SEMICONDUCTOR MANUFACTURING; AND REFRACTORY PRODUCTS MANUFACTURING

#03-284(APCB) / LSA Document #03-284

Overview

This rulemaking adds national emission standards for hazardous air pollutants (NESHAP) for new and existing plant sites for seven categories of sources.

Citations Affected

Adds 326 IAC 20-57; 326 IAC 20-58; 326 IAC 20-59; 326 IAC 20-60; 326 IAC 20-61; 326 IAC 20-62; 326 IAC 20-70.

Affected Persons

The general public in the vicinity of the sources subject to the applicable NESHAP will benefit. The industry sources include: 1) 37 potential secondary aluminum production sources; 2) eight potential pharmaceuticals production sources; 3) four potential vegetable oil solvent extraction for production sources; 4) two potential sources for semiconductor manufacturing; 5) two potential refractory products manufacturing.

Reason for the Rule

IDEM must incorporate the federal NESHAP requirements into state rules or establish state requirements that are no less stringent.

Economic Impact of the Rule

Because these emission standards are federal requirements and businesses are required to comply with the federal requirements, the state rulemaking will not result in additional costs to the regulated entities beyond the costs imposed by the federal rules.

Benefits of the Rule

This regulation reduces hazardous air pollutants from sources subject to the applicable NESHAP.

Description of the Rulemaking Project

The 1990 Amendments to the Clean Air Act require the United States Environmental Protection Agency (U.S. EPA) to regulate major sources of hazardous air pollutants (HAPs). A major source is defined as any stationary source or group of stationary sources located within a contiguous area and under common control that has the potential to emit, considering controls, ten tons per year or more of any single hazardous air pollutant or 25 tons per year or more of any combination of HAPs. HAPs are listed by U.S. EPA because they are either known or suspected to cause cancer or other serious health effects. There are currently 188 HAPs listed in the Clean Air Act. On July 16, 1992, U.S. EPA published a list of industrial groups or source categories that emit one or more of the 188 listed HAPs (57 FR 311576). The Clean Air Act also requires U.S. EPA to develop emission standards, referred to as national emission standards for hazardous air pollutants (NESHAPs), that require the application of air pollution reduction measures based on maximum achievable control technology (MACT) for the listed source categories. The "MACT floor" is the minimum control level allowed for NESHAPs and ensures that the standard is set at a level that assures that all existing major sources achieve the level of control at least as stringent as that already achieved by the better-controlled and lower-emitting sources in each source category or subcategory. For new sources, the "MACT floor" cannot be less stringent

than the emission control that is achieved in practice by the best-controlled similar source.

IDEM must incorporate the federal requirements into state rules or establish state requirements that are no less stringent than the federal requirements. This rulemaking will incorporate by reference the following NESHAPs:

Secondary Aluminum Production Plants

Secondary aluminum production plants recover aluminum from secondary sources such as beverage cans, foundry returns, and dross. Examples of processes that release air toxics include aluminum scrap shredding, thermal chip drying, and furnace operations. The type of air toxics released varies widely due to the variety of process operations, but may include: metals, organic compounds, and acid gases such as hydrogen chloride and chlorine. Health effects may include cancer, respiratory irritation, and damage to the nervous system. Nationwide, U.S. EPA estimates this rule will reduce emissions of air toxics by about 12,420 tons per year, a reduction of nearly 70% for secondary aluminum production plants. There are 37 potential identified sources in Indiana.

Pharmaceuticals Production

Pharmaceuticals production includes chemical production operations used to produce drugs and medication. Processes include chemical synthesis, which is deriving a drug's active ingredient; and chemical formulation, which is producing a drug in its final form. Emission points of affected sources include storage tanks, process vents, equipment leaks, wastewater collection and treatment systems, and cooling towers. Air toxics emitted include: methylene chloride, methanol, toluene, and hydrogen chloride. These toxics are known or suspected of causing cancer and other serious health effects. Nationwide, U.S. EPA estimates this rule will reduce emissions of air toxics by about 24,000 tons, a reduction of nearly 65% for pharmaceuticals production. There are eight potential identified sources in Indiana.

Amino and Phenolic Resins

Amino and phenolic resins are used in the manufacturing of plywood, particle board, adhesives, wood furniture, and plastic parts. Regulated chemicals used to manufacture amino and phenolic resins include: formaldehyde, phenol, methanol, xylene, and toluene. Formaldehyde, especially, is a probable human carcinogen, and short term exposure may cause respiratory tract effects in humans. Nationwide, U.S. EPA estimates this rule will reduce emissions of a number of air toxics by 361 tons per year, a reduction of 51%. There are no potential identified sources, at this time, in Indiana.

Polyether Polyols Production

Polyether polyols are produced during the chemical production operations used in making lubricants, adhesives, sealants, cosmetics, soaps, and feedstock polymers for urethane production. Emissions of air toxics are produced from different stages of production. Emission points of affected sources include storage tanks, process vents, equipment leaks, and wastewater treatment systems. Processes include emissions from a number of air toxics including ethylene oxide, propylene oxide, toluene, and hexane. Ethylene oxide, for example, is a probable human carcinogen that causes adverse reproductive and developmental effects. Nationwide, U.S. EPA estimates reduction of air toxics by 2,000 tons annually, a reduction of 50% for polyether polyols production sources. In addition, since many of these chemicals are also volatile organic compounds that contribute to the formation of ozone, this rule will also help to reduce ground-level ozone. There are no potential identified sources at this time in Indiana.

Solvent Extraction for Vegetable Oil Production

This rule affects facilities that use hexane to extract oil from vegetable seeds. Long term exposure to hexane can cause permanent nerve damage in humans. There are at least eight types of oilseeds used in the extraction process: soybeans, cottonseed, rapeseed (canola), corn germ, sunflower, safflower, peanuts, and flax. The rule restricts plantwide hexane emissions from each affected facility rather than requiring individual controls at each emission point. U.S. EPA expects that the facilities will comply with this rule by upgrading equipment to recover and recycle solvents. Nationwide, U.S. EPA estimates that this rule will reduce emissions of hexane by 6,800 tons per year and ozone forming volatile organic compounds by 10,600 tons per year. There are

four potential identified sources at this time in Indiana.

Semiconductor Manufacturing

The semiconductor manufacturing industry is a subset of the electronics manufacturing industry that produces integrated circuits. Integrated circuits are used in products such as computers, appliances, radios, and compact disc players. Air toxics emitted include hydrochloric acid, hydrofluoric acid, glycol ethers, methanol, and xylene. Process vents containing organic air toxics are required to reduce emissions by 98% or to below 20ppmv, while inorganic process vents are required to reduce emissions by 95% to below 0.42ppmv. Storage tanks greater than 1,500 gallons capacity are required to reduce emissions to the same level of control as inorganic process vents. There are two potential identified sources in Indiana.

Refractory Products Manufacturing

Refractory products are heat-resistant materials that provide the linings for high-temperature furnaces, reactors, and other process units that include extreme temperatures, corrosion, and abrasion. Air toxics emitted from the manufacture of refractory products include formaldehyde, polycyclic organic matter, phenol, ethylene glycol, and methanol. The rule will also limit the emissions of hydrogen fluoride and hydrochloric acid from new kilns that manufacture clay refractory products and will require the use of natural gas as fuel for existing clay refractory product manufacturers. Nationwide, U.S. EPA estimates a reduction of air toxics by 137 tons a year, a reduction of 50% from 1996 levels. There are two potential identified sources in Indiana.

Scheduled Hearings

First Public Hearing: January 7, 2004

Consideration of Factors Outlined in Indiana Code 13-14-8-4

Indiana Code 13-14-8-4 requires that in adopting rules and establishing standards, the board shall take into account the following:

1) All existing physical conditions and the character of the area affected.

2) Past, present, and probable future uses of the area, including the character of the uses of surrounding areas.

3) Zoning classifications.

4) The nature of the existing air quality or existing water quality, as appropriate.

5) Technical feasibility, including the quality conditions that could reasonably be achieved through coordinated control of all factors affecting the quality.

6) Economic reasonableness of measuring or reducing any particular type of pollution.

(7) The right of all persons to an environment sufficiently uncontaminated as not to be injurious to:

(A) human, plant, animal, or aquatic life; or

(B) the reasonable enjoyment of life and property.

Consistency with Federal Requirements

The new rules are consistent with federal rules.

Rulemaking Process

The first step in the rulemaking process is publication of one of three types of notices in the *Indiana Register*. The first type of notice is a first notice of comment period. The first notice of comment period includes a discussion of issues and opens a first comment period. A second notice is then published which contains the comments and the departments responses from the first comment period, a notice of first meeting/hearing, and the draft rule. The second type of notice is a section 7 notice. A section 7 notice contains a determination by the commissioner under IC 13-14-9-7 that only one comment period is required. It contains the commissioner's determination and findings, the draft rule, a request for written comments and a notice of first meeting/hearing. The third type of notice is a section 8 notice. A section 8 notice contains a determination by the commissioner under IC 13-14-9-8 that no public comment periods are required. It contains the commissioner's determination and findings, the draft rule and a notice of first meeting/hearing. In each case the Air Pollution Control Board holds the first meeting/hearing and public comments are heard. The proposed rule is published in the *Indiana Register* after preliminary adoption along with a notice of second meeting/hearing. If the proposed rule is substantively different from the draft rule, a

third comment period is required. The second public meeting/hearing is held and public comments are heard. Once final adoption occurs, the rule is reviewed for form and legality by the Attorney General, signed by the Governor, and becomes effective 30 days after filing with the Secretary of State.

IDEM Contact

Additional information regarding this rulemaking action can be obtained from Gayl Killough, Rules/Regulatory Development Section, Office of Air Quality, (317) 233-8628 or (800) 451-6027 (in Indiana).